Simultaneous cuff revision and placement of an AdVance male sling for persistent post-prostatectomy urinary incontinence initially managed with AMS 800 artificial urinary sphincter

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Placement of an artificial urinary sphincter (AUS) remains the gold standard for treatment of stress urinary incontinence after radical prostatectomy. Persistent or recurrent incontinence after AUS placement can occur. Options then include cuff revision or placement of a retrourethral transobturator sling (RTS), among other alternatives. This report describes simultaneous cuff revision and placement of a RTS for management of refractory stress urinary incontinence after radical prostatectomy. This approach obviates the need for additional procedures if one approach fails. This is especially valuable for patients averse to operative intervention and those at high risk for general anesthesia.

Key Words: artificial urinary sphincter, AdVance male sling, stress urinary incontinence, post-prostatectomy

Introduction

Stress urinary incontinence (SUI) has an incidence as high as 50% one year after radical prostatectomy (RP).[1] If significant incontinence persists 6 to 18 months after RP, surgical management is an option. The gold standard remains the placement of an artificial urinary sphincter (AUS). Retrouretheral transobturator male slings have also been placed for persistent SUI after failure of AUS placement. We report an approach that combines downsizing the urethral cuff of an AUS with simultaneous placement of a retrourethral transobturator sling (RTS). This approach combines the known success of sling placement and cuff revision in hopes of decreasing the need for additional surgical interventions.

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Case report

A 64-year-old man with pathologic Gleason 3 + 4 = 7, pT2c prostate cancer with no evidence of biochemical recurrence 3 years after his prostatectomy presented with persistent stress urinary incontinence approximately one year after RP. He reported using 3-4 pads daily and had failed nonsurgical management. An AMS 800 AUS (American Medical Systems Inc., Minnetonka, MN, USA) with a 4.0 cm cuff was placed 13 months after his RP. He had a short period of complete continence lasting 1-2 months followed by recurrent bothersome urinary SUI requiring 1-2 pads daily.

The patient was significantly bothered by his recurrent post-prostatectomy incontinence (PPI). Options were reviewed with the patient including downsizing of his urethral cuff, as well as placement of an AdVance male sling. The patient strongly desired to resolve his incontinence, but also wanted to limit the number of surgical procedures. He therefore suggested simultaneous placement of a urethral sling and downsizing of his urethral cuff. Prior to surgery his cuff was interrogated in the office and was functioning appropriately. His incontinence had developed gradually and he had no symptoms of cuff erosion or peri-prosthetic infection.

A perineal incision was carried deeply to the level of the urethra above and below the originally placed AUS cuff. The cuff was interrogated intraoperatively and seen to be functioning appropriately. There was the appearance intraoperatively of mild urethral atrophy and was the presumed origin of his worsening incontinence. The 4.0 cm cuff was exchanged for a 3.5 cm cuff without exchange of the rest of the AUS components. The cuff was left deactivated. The urethral dissection was carried proximally on the urethra to the attachment of the perineal body and bilaterally deep to the pubic rami. Approximately 0.5 cm of the perineal body was taken down sharply and three 2-0 polyglactin 910 sutures were placed in the ventral urethra. The wings of the transobturator sling were passed and the sling was secured to the urethra with the previously placed sutures. After securing the sling the urethra was elevated using the wings of the sling and approximately 4 cm of elevation was achieved, Figure 1.

The cuff was initially left deactivated, and the patient was largely dry for the first 6 weeks after the procedure. However, the patient had been advised not to lift more than 10 pounds and to avoid activities that involved extensive bending, squatting, or spreading of his legs during this time to allow the sling to scar in place. Once resuming full activity, his incontinence worsened mildly and the cuff was activated. After cuff activation, he had only very occasional episodes of incontinence when rising from a seated position after sitting on a hard surface but he did not have leakage associated with other valsalva maneuvers. He remains very satisfied with his outcome approximately 1 year after his procedures. He is dry at night and wears a pad during the day for security.

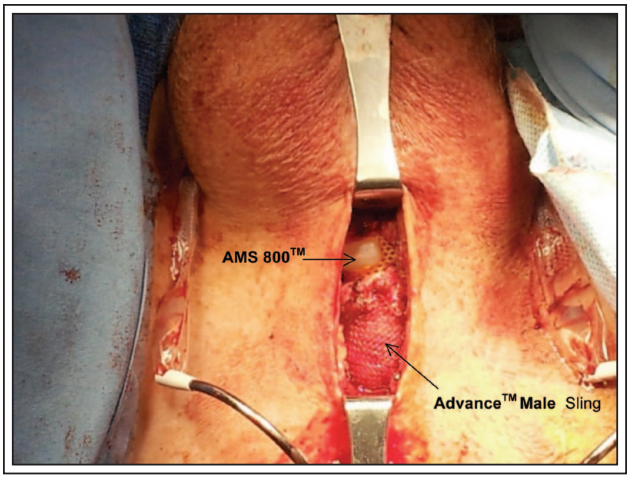

Figure 1. Artificial urinary sphincter cuff with simultaneous transobturator tape with wings passed through obturator fossa.

Discussion

Simultaneous placement of a RTS and revision of the AUS cuff can be performed through a single incision. This approach avoids the potential need for an additional surgical procedure if a single approach is taken and fails. This approach is attractive to those patients averse to future surgical procedures and if they are poor surgical candidates from an anesthetic risk perspective.

Success rates after AUS placement (defined as 0 to 1 pad per day) range from 59% to 90%, and satisfaction results are 87% to 90%. Despite high patient satisfaction rates, large series report revision rates of 20%-25% primarily for recurrent or persistent incontinence due to presumed urethral atrophy, mechanical failure, or mechanical wear.[2] As described by Montague and Saffarian, downsizing the cuff in cases of recurrent incontinence due to urethral atrophy has been shown to be an effective method to improve incontinence.[3-4] In a study of primary verses secondary cuff placement there were similar outcomes in terms of both incontinence (90% and 82% respectively) and 5 year durability (80% and 88% respectively).[5]

In a small series of 19 patients treated with RTS after failure of an AUS, 15 patients (79%) were completely dry. Interestingly, seven patients who were completely dry did not require reactivation of their sphincter at a median follow up of 13 months. All four patients who were not completely dry did report decreased pad requirements.[6] Despite the individual successes of cuff revision and male sling for recurrent PPI, simultaneous AUS cuff revision and RTS placement has not been described.

Simultaneous placement of a transobturator male sling and cuff revision of a previously implanted AUS is an option for management of refractory post-prostatectomy SUI. This approach attempts to avoid the need for additional surgical interventions if a single approach is chosen and does not result in adequate resolution of the patient's PPI. □

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